IGNITION TIMING SENSING METHOD FOR INTERNAL COMBUSTION ENGINE AND ITS DEVICE

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Abstract

PROBLEM TO BE SOLVED: To provide an ignition timing sensing method and device for an internal combustion engine which can estimate an ignition timing independently of an operation condition of the internal combustion engine.
SOLUTION: An internal combustion engine has a pressure sensor for sensing inside pressure of a cylinder. In such an internal combustion engine, fluctuation of the inside pressure of the specified cylinder is sensed from a compression stroke to an explosion stroke, wavelet-conversion is carried out in respect to a signal indicating fluctuation of the pressure inside the cylinder, a characteristic peak is sensed from a spectrum of the signal which is wavelet-converted, and the sensed peak is determined as an ignition timing. In such a case, in order to suppress calculation work of the wavelet-conversion, the signal of the inside pressure of the cylinder is first divided into plural frequency bands which are continuously distributed from low to high bands.
Wavelet-conversion is performed and an ignition timing is obtained in each frequency band. The ignition timing in the low frequency band is corrected by the ignition timing in the high frequency band, for improving accuracy of the ignition timing.